

What is Claimed is:

1. A composition comprising an isolated and purified antigenically-active blood group antigen protein or peptide.
2. The composition of claim 1, wherein said antigen is a mammalian antigen.
3. The composition of claim 2, wherein said mammalian antigen is an Rh antigen.
4. The composition of claim 3, wherein said mammalian Rh antigen is a human or a rabbit homolog of a human Rh antigen.
5. The composition of claim 4, wherein said Rh antigen is a D antigen, a c antigen, a C antigen, an e antigen, an E antigen, an A antigen, a B antigen, or an F antigen.
6. The composition of claim 1, wherein said protein or peptide is antigenically-active under conditions of low pH.
7. The composition of claim 6, wherein said pH is from about pH 6 to about pH 1.
8. The composition of claim 7, wherein said pH is from about pH 2.4 to about pH 4.5.

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9. The composition of claim 1, wherein said protein or peptide is antigenically-active for a period of at least 4 hours.
10. The composition of claim 1, further comprising an amphoteric or zwitterionic buffer.
11. The composition of claim 10, wherein said buffer is EDTA, WRA, MOPS, HEPES, glycine, alanine, Bis-Propane or Bis-Tris.
12. The composition of claim 11, wherein said buffer is WRA.
13. The composition of claim 9, wherein said buffer is present at a concentration of from about 0.01% to about 5%.
14. The composition of claim 1, wherein said protein or peptide is immobilized.
15. The composition of claim 14, wherein said protein or peptide is immobilized onto a glass, plastic, acrylate, methylmethacrylate, Sepharose, agarose, nylon, fiber, or glass wool substrate.

16. The composition of claim 14, wherein said protein or peptide is immobilized onto a petri dish, a test tube, a vial, a microscope slide, an ELISA plate, a microtiter dish, or a culture plate.
17. The composition of claim 14, further comprising an immunoaffinity column or matrix.
18. The composition of claim 14, wherein said protein or peptide is immobilized under conditions of low pH.
19. The composition of claim 18, wherein said pH is from about pH 6 to about pH 1.
20. The composition of claim 19, wherein said pH is from about pH 2.4 to about pH 4.5.
21. The composition of claim 14, wherein said protein or peptide is immobilized in the presence of an amphoteric or zwitterionic buffer.
22. The composition of claim 21, wherein said buffer is EDTA, WRA, MOPS, HEPES, glycine, alanine, Bis-Propane or Bis-Tris.
23. The composition of claim 22, wherein said buffer is WRA.

24. The composition of claim 21, wherein said buffer is present at a concentration of from about 0.01% to about 5%.
25. The composition of claim 24, wherein said buffer is present at a concentration of from about 1% to about 4%.
26. A method of detecting in a sample an antibody specific for a blood group antigen, said method comprising:
- (a) contacting said sample with a protein or peptide in accordance with claim 1, under conditions effective to allow the formation of an immune complex; and
  - (b) detecting the immune complex so formed.
27. The method of claim 26, wherein said antibody is an anti-Rh antibody.
28. The method of claim 27, wherein said antibody is a human or rabbit antibody.
29. The method of claim 28, wherein said antibody is an anti-D antibody, an anti-c antibody, an anti-C antibody, an anti-e antibody, an anti-E antibody, an anti-A antibody, and anti-B antibody, or an anti-F antibody.

30. The method of claim 26, wherein said sample is a blood, serum, plasma, cerebrospinal fluid, lymph, synovial fluid, tissue sample, or culture supernatant.
31. The method of claim 26, wherein said protein or peptide is linked to a detectable label.
32. The antibody of claim 31, wherein said protein or peptide is linked to a radioactive label, a fluorogenic label, a nuclear magnetic spin resonance label, biotin or an enzyme that generates a colored product upon contact with a chromogenic substrate.
33. An immunodetection kit comprising, in suitable container means, a protein or peptide according to claim 1, and an immunodetection reagent.
34. The immunodetection kit of claim 33, wherein the immunodetection reagent is a detectable label that is linked to said protein or peptide.
35. The immunodetection kit of claim 34, wherein the immunodetection reagent is a detectable label that is linked to a second antibody that has binding affinity for said protein or peptide.
36. The immunodetection kit of claim 35, wherein the immunodetection reagent is a detectable label that is linked to an antibody that has binding affinity for a human or rabbit blood group antigen protein or peptide.

37. The immunodetection kit of claim 36, wherein the immunodetection reagent is a detectable label that is linked to a second antibody that has binding affinity for a human Rh blood group antigen protein or peptide.
38. The immunodetection kit of claim 36, wherein said blood group antigen is a D antigen, a c antigen, a C antigen, an e antigen, an E antigen, an A antigen, a B antigen, or an F antigen.
39. A method of stabilizing an antigenically-active blood group antigen protein or peptide, comprising admixing said antigenically-active blood group antigen protein or peptide with an effective amount of a low pH buffer.
40. The method of claim 39, wherein said protein or peptide is a mammalian antigen.
41. The method of claim 40, wherein said mammalian antigen is an Rh antigen.
42. The method of claim 41, wherein said Rh antigen is a human Rh antigen or a rabbit homolog of a human Rh antigen.
43. The method of claim 42, wherein said antigen is a D antigen, a c antigen, a C antigen, an e antigen, an E antigen, an A antigen, a B antigen, or an F antigen.

44. The method of claim 39, further comprising immobilizing said protein or peptide to a support.
45. The method of claim 44, wherein said substrate is a glass, plastic, acrylate, methacrylate, Sepharose, agarose, nylon, fiber, or glass wool support.
46. The method of claim 39, wherein said pH is from about pH 6 to about pH 1.
47. The method of claim 46, wherein said pH is from about pH 2.4 to about pH 4.5.
48. The method of claim 39, wherein said protein or peptide is antigenically-active in the presence of an amphoteric or zwitterionic buffer.
49. The method of claim 48, wherein said buffer is EDTA, WRA, MOPS, HEPES, glycine, alanine, Bis-Propane or Bis-Tris.
50. The method of claim 49, wherein said buffer is present at a concentration of from about 0.01% to about 5%.
51. The method of claim 50, wherein said buffer is present at a concentration of from about 1% to about 4%.

52. An apparatus comprising a chamber having an inlet port and an outlet port, said chamber containing an immobilized antigenically-active blood group antigen.
53. The apparatus of claim 52, wherein said chamber is cylindrical.
54. The apparatus of claim 52, wherein said protein or peptide is a mammalian antigen.
55. The apparatus of claim 54, wherein said mammalian antigen is an Rh antigen.
56. The apparatus of claim 55, wherein said Rh antigen is a human Rh antigen or a rabbit homolog of a human Rh antigen.
57. The apparatus of claim 56, wherein said antigen is a D antigen, a c antigen, a C antigen, an e antigen, an E antigen, an A antigen, a B antigen, or an F antigen.
58. The apparatus of claim 52, further comprising a pump.
59. The apparatus of claim 52, wherein said protein or peptide is immobilized onto a glass, plastic, acrylate, methylmethacrylate, Sepharose, agarose, nylon, fiber, or glass wool support.



60. The apparatus of claim 52, wherein said protein or peptide is immobilized under conditions of low pH.
61. The apparatus of claim 60, wherein said pH is from about pH 6 to about pH 1.
62. The apparatus of claim 61, wherein said pH is from about pH 2.4 to about pH 4.5.
63. The apparatus of claim 52, wherein said antigen is immobilized in the presence of an amphoteric or zwitterionic buffer.
64. The apparatus of claim 63, wherein said buffer is EDTA, WRA, MOPS, HEPES, glycine, alanine, Bis-Propane or Bis-Tris.
65. The apparatus of claim 63, wherein said buffer is present at a concentration of from about 0.01% to about 5%.
66. The apparatus of claim 65, wherein said buffer is present at a concentration of from about 1% to about 4%.
67. A device comprising an antigenically-active blood group antigen protein or peptide.

68. The device of claim 67, wherein said protein or peptide is immobilized.
69. The device of ~~claim 68~~, wherein said protein or peptide is immobilized under conditions of low pH.
70. The device of ~~claim 69~~, wherein said pH is of from about pH 6 to about 1.
71. The device of ~~claim 70~~, wherein said pH is from about pH 2.4 to about pH 4.5.
72. The device of ~~claim 67~~, wherein said protein or peptide is a mammalian antigen.
73. The device of ~~claim 72~~, wherein said mammalian antigen is a D antigen, a c antigen, a C antigen, an e antigen, an E antigen, an A antigen, a B antigen, or an F antigen.
74. The device of ~~claim 67~~, further comprising a glass, plastic, acrylate, methylmethacrylate, Sepharose, agarose, nylon, fiber, or glass wool support.
75. ~~An antigenically-active blood group antigen prepared by the method of claim 39.~~
76. A method of purifying an Rh antibody comprising:

- (a) contacting a sample suspected of containing said antibody with an immobilized antigen under conditions effective to bind said antibody; and
- (b) subsequently eluting said antibody from said immobilized antigen.

77. A method of removing an Rh antibody from a biological fluid comprising contacting said fluid with an immobilized Rh antigen under conditions effective to bind said antibody to said antigen.

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